

What's new in STOPS version 1.50 (build date 04/28/2015, posted 05/06/2015)

Version 1.50 is a major update that revises several components of version 1.02 and adds several new features. This new version is more-or-less half way to Version 2.0 which continues in development with an expected beta roll-out in winter, 2015-2016. Version 1.5 includes significant revisions to methods used to: predict non-home-based trips, represent additional impedances in the transit network beyond those available from the General Transit Feed (GTF) data, build transit paths and quantify their impedances, predict and report trips for bus rapid transit (BRT) projects, use rider counts at existing stations to adjust the predictions, and report summary statistics for the GTF network in each scenario. Version 1.50 handles much larger problem sizes and has recalibrated with an expanded set of data from fixed-guideway systems and projects across the country.

Version 1.50 is likely to produce forecasts that are different from those produced by earlier STOPS versions. Depending on circumstances, the changes may be significant.

Compared to version 1.02, STOPS version 1.50:

1. Replaces all procedures used to predict non-home based trips in response to overestimates of this ridership market evident in new metro areas added to the STOPS calibration and validation datasets. The overestimates were particularly significant in areas with central business districts that are large in terms of employment, transit trip-attractions, and geographic extent. HIGH
2. Adds several ways that users can provide additional detail on impedances for fixed guideway stations (and other designated stops) including:
 - the vertical profile and resulting within-station walk times to platforms; and
 - station-specific time penalties by access mode that can be access times at stations, different transit-mode-specific fare policies, capacity constraints at park-ride lots, and other influences on actual ridership patterns.
3. Revises the schedule-based path-builder so that trips are scheduled to reach the destination at a specific time (e.g., arrive at work by 8:00 am) rather than depart the origin at a specific time (e.g., depart home at 7:30). The revised approach produces similar paths for shorter trips but works much better for very long trips that must leave home much earlier to arrive at work within the peak period.
4. Revises the path-builder to consider multiple required arrival times throughout the hour. The path selected for each zone-to-zone interchange therefore reflects the variation in the times at which different travelers need to arrive at work. This change results in more robust estimates of trips on the project that more stable across minor variations in station locations, coded schedules, and other project details.
5. Revises the path-builder to compute wait times from the scheduled times at stations/stops in the GTFS data rather than from station-to-station frequencies compiled from the GTFS data as in earlier versions.
6. Redefines the Fixed Guideway Visibility Factor so that most fixed guideway projects can use its maximum value (1.0), replacing earlier versions in which used values of 1.0 for heavy rail, 0.5 for commuter rail and light rail, and lower values for some streetcars. With version 1.5, only those streetcars or BRT routes that operate in mixed traffic are be coded with a visibility factor less than 1.0.
7. Revises the effects of the visibility factor on mode-specific constants and nesting constants so that a fixed guideway visibility factor of 0.1 applied to a (BRT) project predicts a number of trips on the project that is similar to the prediction when the project is coded instead as a bus route.

8. Revises the accounting of trips on the project in cases where the project is used by bus or rail trips that neither board nor alight at a project station. With Version 1.50, any trip boarding, alighting, or passing through a new station is counted as a trip on the project.
9. Adds a new “Group Calibration Approach” option to the STOPS parameter screen that allows the user to control the calibration to station counts. Options include a no-calibration setting plus several new procedures for implementing station group calibration.
10. Revises recommended practices for defining station groups.
11. Adds a capability to split Traffic Analysis Zones, Tracts, or Block Groups.
12. Increases the maximum problem size that STOPS can handle to 9,000 zones, 10,000 stations and designated bus stops, 250 new stations, 250 station groups, and 20 GTFS files.
13. Reflects an updated model calibration that includes the actual experience with new fixed guideway systems in several additional metro areas.
14. Adds a new transit route statistics report (Tables 10.03 and 10.04 in the STOPS report file) to show revenue mile and hour operating statistics for each operated route for the time spans used for simulating peak and midday periods. This report is designed to identify large and unintended changes in operating assumptions among the existing, no-build, and build scenarios.

The updated STOPS User Guide, pages 1-4, provides additional detail on these changes and their implications for users.

What’s new in STOPS version 1.02 (build date 02/06/2014, posted 02/25/2014)

Version 1.02 includes several minor updates that improve the handling of exceptions in input files, address size-related issues for large metropolitan areas, reduce processing times and file sizes, and the expand the reporting of the resulting ridership forecasts. Some of the updates change the precision in which values are stored and processed and therefore change the resulting forecasts in trivial ways. None of the updates change the forecasts in substantive ways.

1. Permits the user to skip steps in the application where files created in previous applications are still applicable.
2. Permits the user to specify the mapping of trip-attraction locations in addition to trip-production attractions.
3. Permits the user to specify zones that will be exceptions to the general rules that apply to zones within 25-miles of any fixed-guideway station. These zones are specified with entries in the LSAD field (that is otherwise blank) of the CTPP TAZ files:
 - a. A user-coded “XX” in the field completely excludes from the analysis all travel to and from the zone (potentially useful to reduce the size of the application in terms of runtime and disk space);
 - b. A user-coded “YY” in the field excludes from the analysis travel between the zone and all other zones coded with “YY” in the field.

These exclusions are potentially useful in larger metropolitan areas where travel associated with large numbers of zones may be irrelevant to the project of interest.

4. Handles missing-value cases in the statewide TAZ files from the Census. These cases are ignored rather than treated as fatal errors.
5. Reads the GTFS Calendar_Date.txt file in cases where no Calendar.txt file exists.
6. Uses binary format rather than ASCII text for temporary intermediate files to reduce their size, speed up their output and input, and increase their precision.
7. Employs bucket-rounding for the non-home-based trip tables to reduce the number of non-zero cells, file sizes, and processing times.
8. Reports total ridership for all routes (rather than fixed-guideway routes only) in Table 17.01 in the report file. To enable this reporting, adds characteristics of bus paths to the zone-to-zone file.
9. Computes and reports stop-specific ridership for bus routes specified by the user.
10. Increases to 360 the maximum number of stations/stops for which ridership is reported.
11. Includes in the report file an index to tables in the Appendix.